



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,498	09/26/2006	Takeshi Okano	M1071.1971.	3607
32173 7590 06/03/2008 DICKSTEIN SHAPIRO LLP 1177 AVENUE OF THE AMERICAS (6TH AVENUE) NEW YORK, NY 10036-2714				
EXAMINER				
TAN, VIBOL				
ART UNIT		PAPER NUMBER		
2819				
MAIL DATE		DELIVERY MODE		
06/03/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/575,498

Applicant(s)

OKANO ET AL.

Examiner

Vibol Tan

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 6 and 7 is/are allowed.
6) ☒ Claim(s) 1-3, 5, 8-13, 16 and 17 is/are rejected.
7) ☒ Claim(s) 4, 14, 15 and 18-20 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date 4/11/06:9/26/06
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
5) ☐ ~~Notice of Informal Patent Application~~
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 8-13, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Den (U. S. PAT. 3,646,481).

In claim 1, Den teaches all claimed features in Fig. 2, a waveguide conversion device comprising: a rectangular waveguide (102); a circular waveguide (101) connected to the rectangular waveguide; and an unnecessary-wave suppression groove (space in front of plunger 34) is provided in a mode conversion part between the rectangular waveguide (102) and the circular waveguide (101), the unnecessary-wave suppression groove preventing an unnecessary transmission mode (col. 3, line 1-3) from being excited in the circular waveguide when high signals are transmitted between the waveguides.

In claim 2, Den further teaches the waveguide conversion device according to claim 1, wherein the unnecessary-wave suppression groove (the space in front of plunger 34) is provided in either one or both of the rectangular waveguide and the circular waveguide (101) and extends in a direction that is perpendicular to an electric field component (TM₁₁) of the unnecessary transmission mode.

In claim 3, Den further teaches the waveguide conversion device according to claim 1, wherein the unnecessary-wave suppression groove (the space in front of plunger 34) is provided in the rectangular waveguide at a position corresponding to an axis (z direction) of the circular waveguide.

In claim 5, Den further teaches the waveguide conversion device according to claim 1 further comprising an alignment part (center 12, holes 18 and 20) is provided between the rectangular waveguide (102) and the circular waveguide (101), to align the rectangular waveguide with the circular waveguide when the waveguides are connected to each other.

In claim 8, Den further teaches the waveguide conversion device according to claim 1, wherein the rectangular waveguide transmits TE₁₀ mode signals (TE₂₀); and the circular waveguide transmits TM₀₁ mode signals (TM₁₁).

In claim 9, Den further teaches the waveguide conversion device according to claim 1, wherein the circular waveguide (101) is connected to an H plane (horizontal plane) of the rectangular waveguide (102).

In claim 10, Den further teaches the waveguide conversion device according to claim 9, wherein the circular waveguide (101) is connected to the rectangular waveguide (102) at a right angle (as seen in Fig. 2).

In claim 11, Den further teaches the waveguide conversion device according to claim 1, wherein the circular waveguide (101) is connected to the rectangular waveguide (102) at a right angle (as seen in Fig. 2).

In claim 12, Den further teaches the waveguide conversion device according to claim 1, wherein the unnecessary transmission mode is a (TE₂₀) mode.

In claim 13, Den further teaches the waveguide conversion device according to claim 1, wherein the unnecessary-wave suppression groove (the space in front of plunger 34) has a length of one half or more than one half of a length (plunger 34 is adjustable) of one wave of the signals transmitted between the waveguides.

In claim 16, Den further teaches the waveguide conversion device according to claim 1, wherein the unnecessary-wave suppression groove has a rectangular cross-section (as seen in Fig. 2).

In claim 17, Den further teaches the waveguide conversion device according to claim 1, wherein the unnecessary-wave suppression groove is disposed at a position corresponding to a 0-0 axis (center 12) of the circular waveguide.

3. Claims 4, 14, 15 and 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 6 and 7 appear to comprise allowable subject matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vibol Tan whose telephone number is (571) 272-1811. The examiner can normally be reached on Monday-Friday (7:00 AM-4:30 PM).

Art Unit: 2819

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on (571) 272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vibol Tan/
Primary Examiner, Art Unit 2819